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JUN 11 2002

TECH CENTER 1600/2900

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<120> SUCROSE TRANSPORT PROTEINS

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<140> 09/679,687

<141> 2000-10-05

<150> 60/081,148

<151> 1998-04-09

<150> PCT/US99/07562

<151> 1999-04-07

<160> 28

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<213> Zea mays

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 <213> Zea mays

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 35 40 45
 Ala Leu Gln Leu Ser Leu Leu Thr Pro Tyr Val Gln Thr Leu Gly Leu
 50 55 60
 Ser His Ala Leu Thr Ser Phe Met Trp Leu Cys Gly Pro Ile Ala Gly
 65 70 75 80
 Leu Val Val Gln Pro Leu Val Gly Leu Tyr Ser Asp Arg Cys Thr Ser
 85 90 95
 Arg Trp Gly Arg Arg Arg Pro Phe Ile Leu Thr Gly Cys Met Leu Ile
 100 105 110
 Cys Val Ala Val Ile Val Val Gly Phe Ser Ser Asp Ile Gly Ala Ala
 115 120 125
 Leu Gly Asp Thr Lys Glu His Cys Ser Leu Tyr His Gly Pro Arg Trp
 130 135 140
 His Ala Ala Ile Val Tyr Val Leu Gly Phe Trp Leu Leu Asp Phe Ser
 145 150 155 160
 Asn Asn Thr Val Gln Gly Pro Ala Arg Ala Met Met Ala Asp Leu Cys
 165 170 175
 Asp His His Gly Pro Ser Ala Ala Asn Ser Ile Phe Cys Ser Trp Met
 180 185 190
 Ala Leu Gly Asn Ile Leu Gly Tyr Ser Ser Gly Ser Thr Asn Asn Trp
 195 200 205
 His Lys Trp Phe Pro Phe Leu Lys Thr Ser Ala Cys Cys Glu Ala Cys
 210 215 220
 Ala Asn Leu Lys Gly Ala Phe Leu Val Ala Val Val Phe Leu Val Leu
 225 230 235 240
 Cys Leu Thr Val Thr Leu Ile Phe Ala Lys Glu Val Pro Tyr Arg Ala
 245 250 255
 Asn Glu Asn Leu Pro Thr Thr Lys Ala Gly Gly Glu Val Glu Thr Glu
 260 265 270

Pro Thr Gly Pro Leu Ala Val Leu Lys Gly Phe Lys Asp Leu Pro Pro
 275 280 285
 Gly Met Pro Ser Val Leu Leu Val Thr Ala Ile Thr Trp Leu Ser Trp
 290 295 300
 Phe Pro Phe Ile Leu Tyr Asp Thr Asp Trp Met Gly Arg Glu Ile Tyr
 305 310 315 320
 His Gly Asp Pro Lys Gly Ser Asn Ala Gln Ile Ser Ala Phe Asn Glu
 325 330 335
 Gly Val Arg Val Gly Ala Phe Gly Leu Leu Leu Asn Ser Val Ile Leu
 340 345 350
 Gly Phe Ser Ser Phe Leu Ile Glu Pro Met Cys Arg Lys Val Gly Pro
 355 360 365
 Arg Val Val Trp Val Thr Ser Asn Phe Met Val Cys Val Ala Met Ala
 370 375 380
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 385 390 395 400
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 Pro Phe Ala Val Thr Ala Gln Leu Ala Ala Thr Arg Gly Gly Gly Gln
 435 440 445
 Gly Leu Cys Thr Gly Val Leu Asn Ile Ser Ile Val Ile Pro Gln Val
 450 455 460
 Ile Ile Ala Leu Gly Ala Gly Pro Trp Asp Ala Leu Phe Gly Lys Gly
 465 470 475 480
 Asn Ile Pro Ala Phe Gly Val Ala Ser Ala Phe Ala Leu Val Gly Gly
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 <213> Zea mays

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<213> Zea mays

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His Ile Ile Gly Ala Asn Lys Thr Val Lys Ile Thr Ala Leu Val Val
             20             25             30

```

```

Phe Ser Leu Leu Gly Leu Pro Leu Ser Ile Thr Tyr Ser Val Pro Phe
      35             40             45

```

```

Ser Val Thr Ala Glu Leu Thr Ala Gly Thr Gly Gly Gly Gln Gly Leu
      50             55             60

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```

Ala Thr Gly Val Leu Asn Leu Ala Ile Val Val Pro Gln Ile Val Val
      65             70             75             80

```

```

Ser Leu Gly Ala Gly Pro Trp Asp Ala Leu Tyr Gly Gly Gly Asn Thr
             85             90             95

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Pro Ala Phe Val Leu Ala Ser Val Phe Ser Leu Ala Ala Gly Val Leu
      100            105            110

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Ala Val Leu Lys Leu Pro Lys Leu Ser Asn Ser Tyr Gln Ser Ala Gly
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Phe His Gly Phe Gly
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<211> 1977

<212> DNA

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<211> 497

<212> PRT

<213> Zea mays

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      20              25              30

Leu Leu Thr Pro Tyr Val Gln Thr Leu Gly Leu Ser His Ala Leu Thr
      35              40              45

Ser Phe Met Trp Leu Cys Gly Pro Ile Ala Gly Leu Val Val Gln Pro
      50              55              60

Leu Val Gly Leu Tyr Ser Asp Arg Cys Thr Ala Arg Trp Gly Arg Arg
      65              70              75              80

Arg Pro Phe Ile Leu Ile Gly Cys Met Leu Ile Cys Leu Ala Val Ile
      85              90              95

Val Val Gly Phe Ser Ser Asp Ile Gly Ala Ala Leu Gly Asp Thr Lys
      100             105             110

Glu His Cys Ser Leu Tyr His Gly Pro Arg Trp His Ala Ala Ile Val
      115             120             125

Tyr Val Leu Gly Phe Trp Leu Leu Asp Phe Ser Asn Asn Thr Val Gln
      130             135             140

Gly Pro Ala Arg Ala Met Met Ala Asp Leu Cys Gly His His Gly Pro
      145             150             155             160

Ser Ala Ala Asn Ser Ile Phe Cys Ser Trp Met Ala Leu Gly Asn Ile
      165             170             175

Leu Gly Tyr Ser Ser Gly Ser Thr Asn Asn Trp His Lys Trp Phe Pro
      180             185             190

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Leu	Phe	Phe	Ala	Lys	Glu	Val	Pro	Tyr	Arg	Gly	Asn	Gln	Asn	Leu	Pro		
225					230					235					240		
Thr	Lys	Ala	Asn	Gly	Glu	Val	Glu	Thr	Glu	Pro	Ser	Gly	Pro	Leu	Ala		
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Val	Leu	Lys	Gly	Phe	Lys	Asn	Leu	Pro	Thr	Gly	Met	Pro	Ser	Val	Leu		
			260					265					270				
Leu	Val	Thr	Gly	Leu	Thr	Trp	Leu	Ser	Trp	Phe	Pro	Phe	Ile	Leu	Tyr		
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Asp	Thr	Asp	Trp	Met	Gly	Arg	Glu	Ile	Tyr	His	Gly	Asp	Pro	Lys	Gly		
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Ile	Glu	Pro	Met	Cys	Arg	Lys	Val	Gly	Pro	Arg	Val	Val	Trp	Val	Thr		
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Phe	Trp	Ser	Leu	Lys	Asp	Tyr	His	Gly	Tyr	Val	Gln	Asp	Ala	Ile	Thr		
	370					375					380						
Ala	Ser	Thr	Ser	Ile	Lys	Ala	Val	Cys	Leu	Val	Leu	Phe	Ala	Phe	Leu		
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Gln	Leu	Ala	Ala	Thr	Lys	Gly	Gly	Gly	Gln	Gly	Leu	Cys	Thr	Gly	Val		
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Gly	Pro	Trp	Asp	Ala	Leu	Phe	Gly	Lys	Gly	Asn	Ile	Pro	Ala	Phe	Gly		
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Val	Ala	Ser	Gly	Phe	Ala	Leu	Ile	Gly	Gly	Val	Val	Gly	Val	Phe	Leu		
465					470					475					480		
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His

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 <211> 1653
 <212> DNA
 <213> *Oryza sativa*

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 <211> 400
 <212> PRT
 <213> *Oryza sativa*

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 35 40 45
 Asp Val Gly Asn Asn Ala Thr Gln Gly Pro Cys Arg Ala Phe Leu Ala
 50 55 60
 Asp Leu Thr Glu Asn Asp Pro Arg Arg Thr Arg Ile Ala Asn Ala Tyr
 65 70 75 80
 Phe Ser Leu Phe Met Ala Leu Gly Asn Ile Leu Gly Tyr Ala Thr Gly
 85 90 95
 Ala Tyr Ser Gly Trp Tyr Lys Ile Phe Pro Phe Thr Val Thr Pro Ser
 100 105 110

Cys	Ser	Ile	Ser	Cys	Ala	Asn	Phe	Lys	Ser	Ala	Phe	Leu	Leu	Asp	Ile	
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Ile	Ile	Leu	Val	Val	Thr	Thr	Cys	Ile	Thr	Val	Ala	Ser	Val	Gln	Glu	
	130					135					140					
Pro	Gln	Ser	Phe	Gly	Ser	Asp	Glu	Ala	Asp	His	Pro	Ser	Thr	Glu	Gln	
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Glu	Ala	Phe	Leu	Trp	Glu	Leu	Phe	Gly	Ser	Phe	Arg	Tyr	Phe	Thr	Leu	
			165						170					175		
Pro	Val	Trp	Met	Val	Leu	Ile	Val	Thr	Ala	Leu	Thr	Trp	Ile	Gly	Trp	
		180						185					190			
Phe	Pro	Phe	Ile	Leu	Phe	Asp	Thr	Asp	Trp	Met	Gly	Arg	Glu	Ile	Tyr	
	195						200					205				
Arg	Gly	Ser	Pro	Asp	Asp	Pro	Ser	Ile	Thr	Gln	Ser	Tyr	His	Asp	Gly	
	210					215					220					
Val	Arg	Met	Gly	Ser	Phe	Gly	Leu	Met	Leu	Asn	Ser	Val	Leu	Leu	Gly	
225					230					235					240	
Phe	Thr	Ser	Ile	Val	Leu	Glu	Lys	Leu	Cys	Arg	Lys	Trp	Gly	Ala	Gly	
			245						250					255		
Leu	Val	Trp	Gly	Val	Ser	Asn	Ile	Leu	Met	Ala	Leu	Cys	Phe	Val	Ala	
		260						265					270			
Met	Leu	Val	Ile	Thr	Tyr	Val	Ala	Lys	Asn	Met	Asp	Tyr	Pro	Pro	Ser	
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	290					295					300					
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<210> 9

<211> 2375

<212> DNA

<213> Oryza sativa

<400> 9


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<210> 10
 <211> 667
 <212> PRT
 <213> *Oryza sativa*

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Lys His Thr Thr Arg Thr Gln Gln Gln Gly Arg Arg Gln Phe Pro Ile
      20                      25                      30

Leu Pro Arg Pro Ala Ser Pro Arg Leu Ser Leu Thr Leu Gln Thr Pro
      35                      40                      45

Thr Ser Asp Ala Ala Ser Leu Ala Pro Cys Pro Arg Arg Ser His Gln
      50                      55                      60

Thr Leu Pro Asp Leu Arg Pro Ala Met Asp Ser Ala Ala Gly Gly Gly
      65                      70                      75                      80

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Gly	Leu	Thr	Ala	Ile	Arg	Leu	Pro	Tyr	Arg	His	Leu	Arg	Asp	Ala	Glu	
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Met	Glu	Leu	Val	Ser	Leu	Asn	Gly	Gly	Thr	Pro	Arg	Gly	Gly	Ser	Pro	
			100					105					110			
Lys	Asp	Pro	Asp	Ala	Thr	His	Gln	Gln	Gly	Pro	Pro	Ala	Ala	Arg	Thr	
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Thr	Thr	Thr	Arg	Lys	Leu	Val	Leu	Ala	Cys	Met	Val	Ala	Ala	Gly	Val	
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Gln	Phe	Gly	Trp	Ala	Leu	Gln	Leu	Ser	Leu	Leu	Thr	Pro	Tyr	Ile	Gln	
145					150					155					160	
Thr	Leu	Gly	Ile	Asp	His	Ala	Met	Ala	Ser	Phe	Ile	Trp	Leu	Cys	Gly	
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Pro	Ile	Thr	Gly	Phe	Val	Val	Gln	Pro	Cys	Val	Gly	Val	Trp	Ser	Asp	
			180					185					190			
Lys	Cys	Arg	Ser	Lys	Tyr	Gly	Arg	Arg	Arg	Pro	Phe	Ile	Leu	Ala	Gly	
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Cys	Leu	Met	Ile	Cys	Phe	Ala	Val	Thr	Leu	Ile	Gly	Phe	Ser	Ala	Asp	
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Leu	Gly	Tyr	Ile	Leu	Gly	Asp	Thr	Thr	Glu	His	Cys	Ser	Thr	Tyr	Lys	
225					230					235					240	
Gly	Ser	Arg	Phe	Arg	Ala	Ala	Ile	Ile	Phe	Val	Leu	Gly	Phe	Trp	Met	
				245					250					255		
Leu	Asp	Leu	Ala	Asn	Asn	Thr	Val	Gln	Gly	Pro	Ala	Arg	Ala	Leu	Leu	
			260					265					270			
Ala	Asp	Leu	Ser	Gly	Pro	Asp	Gln	Cys	Asn	Ser	Ala	Asn	Ala	Ile	Phe	
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Cys	Thr	Trp	Met	Ala	Val	Gly	Asn	Val	Leu	Gly	Phe	Ser	Ser	Gly	Ala	
		290				295					300					
Ser	Gly	Asn	Trp	His	Lys	Trp	Phe	Pro	Phe	Leu	Met	Thr	Arg	Ala	Cys	
305					310					315					320	
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				325					330					335		
Phe	Leu	Leu	Phe	Cys	Met	Ser	Val	Thr	Leu	Tyr	Phe	Ala	Glu	Glu	Ile	
			340					345					350			
Pro	Leu	Glu	Pro	Thr	Asp	Ala	Gln	Arg	Leu	Ser	Asp	Ser	Ala	Pro	Leu	
		355					360					365				
Leu	Asn	Gly	Ser	Arg	Asp	Asp	Asn	Asn	Ala	Ser	Asn	Glu	Pro	Arg	Asn	
		370				375					380					
Gly	Ala	Leu	Pro	Asn	Gly	His	Thr	Asp	Gly	Ser	Asn	Val	Pro	Ala	Asn	
385					390					395					400	

Ser Asn Ala Glu Asp Ser Asn Ser Asn Arg Glu Asn Val Glu Val Phe
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 Asn Asp Gly Pro Gly Ala Val Leu Val Asn Ile Leu Thr Ser Met Arg
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 Trp Leu Ser Trp Phe Pro Phe Phe Leu Phe Asp Thr Asp Trp Met Gly
 450 455 460
 Arg Glu Val Tyr His Gly Asp Pro Asn Gly Asn Leu Ser Glu Arg Lys
 465 470 475 480
 Ala Tyr Asp Asn Gly Val Arg Glu Gly Ala Phe Gly Leu Leu Leu Asn
 485 490 495
 Ser Val Val Leu Gly Ile Gly Ser Phe Leu Val Asp Pro Leu Cys Arg
 500 505 510
 Leu Met Gly Ala Arg Leu Val Trp Ala Ile Ser Asn Phe Thr Val Phe
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 Ile Cys Met Leu Ala Thr Ala Ile Leu Ser Trp Ile Ser Phe Asp Leu
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 Tyr Ser Ser Lys Leu His His Ile Ile Gly Ala Asn Lys Thr Val Lys
 545 550 555 560
 Asn Ser Ala Leu Ile Val Phe Ser Leu Leu Gly Leu Pro Leu Ser Ile
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 Thr Tyr Ser Val Pro Phe Ser Val Thr Ala Glu Leu Thr Ala Gly Thr
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 Gly Gly Gly Gln Gly Leu Ala Thr Gly Val Leu Asn Leu Ala Ile Val
 595 600 605
 Val Pro Gln Ile Val Val Ser Leu Gly Ala Gly Pro Trp Asp Ala Leu
 610 615 620
 Phe Gly Gly Gly Asn Val Pro Ala Phe Ala Leu Ala Ser Val Phe Ser
 625 630 635 640
 Leu Gly Ala Gly Val Leu Ala Val Leu Lys Leu Pro Lys Leu Pro Asn
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 <211> 1885
 <212> DNA
 <213> Glycine max

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<210> 12
 <211> 494
 <212> PRT
 <213> Glycine max

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      20              25              30

Ser Leu Leu Thr Pro Tyr Val Gln Thr Leu Gly Val Pro His Ala Trp
  35              40              45

Ala Ser Phe Ile Trp Leu Cys Gly Pro Ile Ser Gly Leu Leu Val Gln
  50              55              60

Pro Ile Val Gly Tyr Ser Ser Asp Arg Cys Gln Ser Arg Phe Gly Arg
  65              70              75              80

Arg Arg Pro Phe Ile Leu Ala Gly Ser Leu Ala Val Ala Ile Ala Val
      85              90              95

Phe Leu Ile Gly Tyr Ala Ala Asp Ile Gly His Ala Ala Gly Asp Asn
 100              105              110

Leu Thr Gln Lys Thr Arg Pro Arg Ala Val Ala Ile Phe Val Ile Gly
 115              120              125

Phe Trp Ile Leu Asp Val Ala Asn Asn Met Leu Gln Gly Pro Cys Arg
 130              135              140

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Ala	Phe	Leu	Gly	Asp	Leu	Ala	Ala	Gly	Asp	Glu	Lys	Lys	Thr	Lys	Ala	145	150	155	160
Ala	Asn	Ala	Phe	Phe	Ser	Phe	Phe	Met	Ala	Val	Gly	Asn	Ile	Leu	Gly		165	170	175
Tyr	Ala	Ala	Gly	Ser	Tyr	Asp	Gly	Leu	His	Arg	Leu	Phe	Pro	Phe	Thr	180	185	190	
Glu	Thr	Glu	Ala	Cys	Asn	Val	Phe	Cys	Ala	Asn	Leu	Lys	Ser	Cys	Phe	195	200	205	
Phe	Phe	Ala	Ile	Val	Leu	Leu	Val	Val	Leu	Thr	Thr	Leu	Val	Leu	Ile	210	215	220	
Thr	Val	Lys	Glu	Thr	Pro	Tyr	Thr	Pro	Lys	Ala	Glu	Lys	Glu	Thr	Glu	225	230	235	240
Asp	Ala	Glu	Lys	Thr	His	Phe	Ser	Cys	Phe	Cys	Gly	Glu	Leu	Cys	Leu	245	250	255	
Ala	Phe	Lys	Gly	Leu	Lys	Arg	Pro	Met	Trp	Met	Leu	Met	Leu	Val	Thr	260	265	270	
Ala	Val	Asn	Trp	Ile	Ala	Trp	Phe	Pro	Tyr	Phe	Leu	Phe	Asp	Thr	Asp	275	280	285	
Trp	Met	Gly	Arg	Glu	Val	Tyr	Gly	Gly	Asp	Val	Gly	Gln	Lys	Ala	Tyr	290	295	300	
Asp	Ser	Gly	Val	His	Ala	Gly	Ser	Leu	Gly	Leu	Met	Leu	Asn	Ala	Val	305	310	315	320
Val	Leu	Ala	Val	Met	Ser	Leu	Ala	Ile	Glu	Pro	Leu	Gly	Arg	Val	Val	325	330	335	
Gly	Gly	Ile	Lys	Trp	Leu	Trp	Gly	Ile	Val	Asn	Ile	Leu	Leu	Ala	Ile	340	345	350	
Cys	Leu	Gly	Met	Thr	Val	Leu	Ile	Thr	Lys	Ile	Ala	Glu	His	Glu	Arg	355	360	365	
Leu	Leu	Asn	Pro	Ala	Leu	Val	Gly	Asn	Pro	Ser	Leu	Gly	Ile	Lys	Val	370	375	380	
Gly	Ser	Met	Val	Phe	Phe	Ser	Val	Leu	Gly	Ile	Pro	Leu	Ala	Ile	Thr	385	390	395	400
Phe	Ser	Val	Pro	Phe	Ala	Leu	Ala	Ser	Ile	Tyr	Ser	Ser	Thr	Ser	Gly	405	410	415	
Ala	Gly	Gln	Gly	Leu	Ser	Leu	Gly	Val	Leu	Asn	Ile	Ala	Ile	Val	Val	420	425	430	
Pro	Gln	Met	Ile	Val	Ser	Thr	Ile	Ser	Gly	Pro	Trp	Asp	Ala	Leu	Phe	435	440	445	
Gly	Gly	Gly	Asn	Leu	Pro	Ala	Phe	Val	Leu	Gly	Ala	Val	Ala	Ala	Val	450	455	460	

Val Ser Ala Ile Leu Ala Val Leu Leu Leu Pro Thr Pro Lys Lys Ala
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Asp Glu Val Arg Ala Ser Ser Leu Asn Met Gly Ser Leu His
 485 490

<210> 13
 <211> 1041
 <212> DNA
 <213> Glycine max

<220>
 <221> unsure
 <222> (1007)
 <223> n=a,c,g or t

<400> 13
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<210> 14
 <211> 322
 <212> PRT
 <213> Glycine max

<220>
 <221> UNSURE
 <222> (311)
 <223> Xaa = ANY AMINO ACID

<220>
 <221> UNSURE
 <222> (321)
 <223> Xaa = ANY AMINO ACID

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 20 25 30
 Lys Ile Met Val Val Ala Ser Ile Ala Ala Gly Val Gln Phe Gly Trp

35					40					45					
Ala	Leu	Gln	Leu	Ser	Leu	Leu	Thr	Pro	Tyr	Val	Gln	Leu	Leu	Gly	Ile
50						55					60				
Pro	His	Thr	Trp	Ala	Ala	Phe	Ile	Trp	Leu	Cys	Gly	Pro	Ile	Ser	Gly
65				70					75						80
Met	Leu	Val	Gln	Pro	Ile	Val	Gly	Tyr	His	Ser	Asp	Arg	Cys	Thr	Ser
				85					90					95	
Arg	Phe	Gly	Arg	Arg	Arg	Pro	Phe	Ile	Ala	Ala	Gly	Ser	Leu	Ala	Val
			100					105					110		
Ala	Ile	Ala	Val	Phe	Leu	Ile	Gly	Tyr	Ala	Ala	Asp	Leu	Gly	His	Met
	115						120					125			
Phe	Gly	Asp	Ser	Leu	Ala	Lys	Lys	Thr	Ala	Pro	Arg	His	Arg	Ile	Phe
130						135					140				
Val	Val	Gly	Phe	Trp	Ile	Leu	Asp	Val	Ala	Asn	Asn	Met	Leu	Gln	Gly
145					150					155					160
Pro	Cys	Arg	Ala	Leu	Leu	Gly	Asp	Leu	Cys	Ala	Gly	Glu	Gln	Arg	Lys
				165					170					175	
Thr	Arg	Asn	Ala	Asn	Ala	Phe	Phe	Ser	Phe	Phe	Met	Ala	Val	Gly	Asn
			180					185					190		
Val	Leu	Gly	Tyr	Ala	Ala	Gly	Ser	Tyr	Ser	Gly	Leu	His	Asn	Val	Phe
	195						200					205			
Pro	Phe	Thr	Lys	Thr	Lys	Ala	Cys	Asp	Val	Tyr	Cys	Ala	Asn	Leu	Lys
	210					215					220				
Ser	Cys	Phe	Phe	Leu	Ser	Ile	Ala	Leu	Leu	Leu	Thr	Leu	Ser	Thr	Ile
225				230							235				240
Ala	Leu	Thr	Tyr	Val	Lys	Glu	Lys	Thr	Val	Ser	Ser	Glu	Lys	Thr	Val
				245					250					255	
Arg	Ser	Ser	Val	Glu	Glu	Asp	Gly	Ser	His	Gly	Gly	Met	Pro	Cys	Phe
			260					265					270		
Gly	Gln	Leu	Phe	Gly	Ala	Phe	Arg	Glu	Leu	Lys	Arg	Pro	Met	Trp	Ile
	275						280					285			
Leu	Leu	Leu	Val	Thr	Cys	Leu	Asn	Trp	Asp	Cys	Leu	Val	Pro	Phe	Leu
	290					295					300				
Leu	Phe	Asp	Thr	Asp	Trp	Xaa	Gly	Arg	Glu	Val	Tyr	Gly	Gly	Lys	Ile
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Xaa Gly															

<210> 15
 <211> 578
 <212> DNA
 <213> *Vernonia mespilifolia*

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acgttgcccg acggtagcaa aaccgcgttg ccaccaggcg gcgacattaa agccggtgct 180
ttgtcaattt ttgccgtcct cggtgcccca ctagctgtga ctttcagtgt tccatgtgct 240
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agattgggac atttaggacc aaaaaaaaaa aaaaaaaaaa 578

<210> 16
<211> 166
<212> PRT
<213> Vernonia mespilifolia

<400> 16
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20 25 30
Ala Asp Ser Glu Arg Gln Phe Lys Thr Leu Pro Asp Gly Ser Lys Thr
35 40 45
Ala Leu Pro Pro Gly Gly Asp Ile Lys Ala Gly Ala Leu Ser Ile Phe
50 55 60
Ala Val Leu Gly Ala Pro Leu Ala Val Thr Phe Ser Val Pro Cys Ala
65 70 75 80
Leu Ala Ser Ile Phe Ser Asn Ser Ser Gly Ala Gly Gln Gly Leu Ser
85 90 95
Leu Gly Val Leu Asn Leu Ala Ile Val Ile Pro Gln Met Phe Val Ser
100 105 110
Val Leu Ser Gly Pro Trp Asp Ala Leu Phe Gly Gly Gly Asn Leu Pro
115 120 125
Ala Phe Val Val Gly Ala Ile Ser Ala Ala Val Ser Gly Ile Leu Ser
130 135 140
Phe Thr Met Leu Pro Ser Pro Pro Pro Asp Val Val Leu Ser Lys Val
145 150 155 160
Ser Gly Gly Gly Met His
165

<210> 17
<211> 1062
<212> DNA
<213> Triticum aestivum

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ccgacgaggc caacgcgttc caggcaggtg tcagggcccg ggcgttcggc ctgctactca 180
actcggctcgt cctgggggttc agctcgttcc tgatcgagcc gctgtgcaag aggctaggcc 240


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cgcgggtggt gtgggtgtca agcaacttcc tcgtctgcat ctccatggcc gccatttgca 300
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gcaaggagat caagatcgtc tccctcgccc tcttcgcctt cctcggaatc cctctcgcca 420
ttctgtacag tgtccctttc gcggtgacgg cgcagctggc ggcgaaacaga ggcggtggcc 480
aagggtgtg cacgggcgtg ctgaacatcg ccatcgatg atcccagggtg atcatcgcg 540
tgggggcggg gccgtgggac gagctgttcg gcaagggcaa catcccggcg ttcggcggtg 600
cgtccgcctt cgcgctcatc ggcgcatcg tcggcatatt cctgctgcc aagatctcca 660
ggcgccagtt ccggggccgtc agcggcggcg gtcactgacc gcgcgcgcgc ccggtcggcc 720
tgagcatggc gaaggccgat cgcgccggcc cgaaggtccc agcccagctc ggcatattacc 780
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<210> 18
 <211> 232
 <212> PRT
 <213> Triticum aestivum

<400> 18

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Tyr	His	Gly	Asp	Pro	Lys	Gly	Thr	Pro	Asp	Glu	Ala	Asn	Ala	Phe	Gln	35	40	45	
Ala	Gly	Val	Arg	Ala	Gly	Ala	Phe	Gly	Leu	Leu	Leu	Asn	Ser	Val	Val	50	55	60	
Leu	Gly	Phe	Ser	Ser	Phe	Leu	Ile	Glu	Pro	Leu	Cys	Lys	Arg	Leu	Gly	65	70	75	80
Pro	Arg	Val	Val	Trp	Val	Ser	Ser	Asn	Phe	Leu	Val	Cys	Ile	Ser	Met	85	90	95	
Ala	Ala	Ile	Cys	Ile	Ile	Ser	Trp	Trp	Ala	Thr	Gln	Asp	Leu	His	Gly	100	105	110	
Tyr	Ile	Gln	His	Ala	Ile	Thr	Ala	Ser	Lys	Glu	Ile	Lys	Ile	Val	Ser	115	120	125	
Leu	Ala	Leu	Phe	Ala	Phe	Leu	Gly	Ile	Pro	Leu	Ala	Ile	Leu	Tyr	Ser	130	135	140	
Val	Pro	Phe	Ala	Val	Thr	Ala	Gln	Leu	Ala	Ala	Asn	Arg	Gly	Gly	Gly	145	150	155	160
Gln	Gly	Leu	Cys	Thr	Gly	Val	Leu	Asn	Ile	Ala	Ile	Val	Ile	Pro	Gln	165	170	175	
Val	Ile	Ile	Ala	Val	Gly	Ala	Gly	Pro	Trp	Asp	Glu	Leu	Phe	Gly	Lys	180	185	190	
Gly	Asn	Ile	Pro	Ala	Phe	Gly	Val	Ala	Ser	Ala	Phe	Ala	Leu	Ile	Gly	195	200	205	
Gly	Ile	Val	Gly	Ile	Phe	Leu	Leu	Pro	Lys	Ile	Ser	Arg	Arg	Gln	Phe				

210

215

220

Arg Ala Val Ser Gly Gly Gly His
225 230

<210> 19
<211> 2083
<212> DNA
<213> *Triticum aestivum*

<220>
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<222> (1093)
<223> n=a,c,g or t

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ccgtccttgcc cctagatcct tggccgggca gggatacgcc gtagaattga taggcgaacg 180
gacgaggtgg tgatcgccag ggcggcctct ctgccatggc gcgcggcgga ggcaacggcg 240
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<210> 20
<211> 522
<212> PRT
<213> *Triticum aestivum*

<400> 20
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			20					25					30				
Asp	Ile	Ser	Leu	Gly	Arg	Leu	Ile	Leu	Ala	Gly	Met	Val	Ala	Gly	Gly		
		35					40					45					
Val	Gln	Tyr	Gly	Trp	Ala	Leu	Gln	Leu	Ser	Leu	Leu	Thr	Pro	Tyr	Val		
	50					55					60						
Gln	Thr	Leu	Gly	Leu	Ser	His	Ala	Leu	Thr	Ser	Phe	Met	Trp	Leu	Cys		
	65				70					75					80		
Gly	Pro	Ile	Ala	Gly	Leu	Val	Val	Gln	Pro	Cys	Val	Gly	Leu	Tyr	Ser		
				85					90					95			
Asp	Lys	Cys	Thr	Ser	Arg	Trp	Gly	Arg	Arg	Arg	Pro	Phe	Ile	Leu	Thr		
			100					105					110				
Gly	Cys	Ile	Leu	Ile	Cys	Ile	Ala	Val	Val	Val	Val	Gly	Phe	Ser	Ala		
	115						120					125					
Asp	Ile	Gly	Ala	Gly	Leu	Gly	Asp	Ser	Lys	Glu	Glu	Cys	Ser	Leu	Tyr		
	130					135					140						
His	Gly	Pro	Arg	Trp	His	Ala	Ala	Ile	Val	Tyr	Val	Leu	Gly	Phe	Trp		
	145				150					155					160		
Leu	Leu	Asp	Phe	Ser	Asn	Asn	Thr	Val	Gln	Gly	Pro	Ala	Arg	Ala	Leu		
				165					170						175		
Met	Ala	Asp	Leu	Ser	Ala	Gln	His	Gly	Pro	Ser	Ala	Ala	Asn	Ser	Ile		
			180					185					190				
Phe	Cys	Ser	Trp	Met	Ala	Leu	Gly	Asn	Ile	Leu	Gly	Tyr	Ser	Ser	Gly		
		195					200					205					
Ser	Thr	Asn	Asn	Trp	His	Lys	Trp	Phe	Pro	Phe	Leu	Arg	Thr	Arg	Ala		
	210					215					220						
Cys	Cys	Glu	Ala	Cys	Ala	Asn	Leu	Lys	Gly	Ala	Phe	Leu	Val	Ala	Val		
	225				230					235					240		
Leu	Val	Leu	Ala	Phe	Cys	Leu	Val	Ile	Thr	Val	Ile	Phe	Ala	Lys	Glu		
				245					250					255			
Ile	Pro	Tyr	Lys	Ala	Ile	Ala	Pro	Leu	Pro	Thr	Lys	Gly	Asn	Gly	Gln		
			260					265					270				
Val	Glu	Val	Glu	Pro	Thr	Gly	Pro	Leu	Ala	Val	Phe	Lys	Gly	Phe	Lys		
	275						280					285					
Asn	Leu	Pro	Pro	Met	Pro	Ser	Val	Leu	Leu	Val	Thr	Gly	Leu	Thr	Trp		
	290					295					300						
Leu	Ser	Trp	Phe	Pro	Phe	Ile	Leu	Tyr	Asp	Thr	Asp	Trp	Met	Gly	Arg		
	305				310					315					320		
Glu	Ile	Tyr	His	Gly	Asp	Pro	Lys	Gly	Thr	Pro	Asp	Glu	Ala	Asn	Ala		
			325					330						335			
Phe	Gln	Ala	Gly	Val	Arg	Ala	Gly	Ala	Phe	Gly	Leu	Leu	Leu	Asn	Ser		

340	345	350
Val Val Leu Gly Phe Ser Ser Phe Leu Ile Glu Pro Leu Cys Lys Arg		
355	360	365
Leu Gly Pro Arg Val Val Trp Val Ser Ser Asn Phe Leu Val Cys Leu		
370	375	380
Ser Met Ala Ala Ile Cys Ile Ile Ser Trp Trp Ala Thr Gln Asp Leu		
385	390	395
His Gly Tyr Ile Gln His Ala Ile Thr Ala Ser Lys Glu Ile Lys Ile		
405	410	415
Val Ser Leu Ala Leu Phe Ala Phe Leu Gly Ile Pro Leu Ala Ile Leu		
420	425	430
Tyr Ser Val Pro Phe Ala Val Thr Ala Gln Leu Ala Ala Lys Arg Gly		
435	440	445
Gly Gly Gln Gly Leu Cys Thr Gly Val Leu Asn Ile Ala Ile Val Ile		
450	455	460
Pro Gln Val Ile Ile Ala Val Gly Ala Gly Pro Trp Asp Glu Leu Phe		
465	470	475
Gly Lys Gly Asn Ile Pro Ala Phe Gly Met Ala Ser Ala Phe Ala Leu		
485	490	495
Ile Gly Gly Ile Val Gly Ile Phe Leu Leu Pro Lys Ile Ser Arg Arg		
500	505	510
Gln Phe Arg Ala Val Ser Gly Gly Gly His		
515	520	

<210> 21
 <211> 2160
 <212> DNA
 <213> Triticum aestivum

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<210> 22

<211> 522

<212> PRT

<213> Triticum aestivum

<400> 22

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Met Ala Arg Gly Gly Gly Asn Gly Glu Val Glu Leu Ser Val Gly Val
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Gly Gly Gly Gly Ala Gly Ala Gly Gly Ala Asp Ala Pro Ala Val Asp
      20              25              30

Ile Ser Leu Gly Arg Leu Ile Leu Ala Gly Met Val Ala Gly Gly Val
      35              40              45

Gln Tyr Gly Trp Ala Leu Gln Leu Ser Leu Leu Thr Pro Tyr Val Gln
      50              55              60

Thr Leu Gly Leu Ser His Ala Leu Thr Ser Phe Met Trp Leu Cys Gly
      65              70              75              80

Pro Ile Ala Gly Leu Val Val Gln Pro Cys Val Gly Leu Tyr Ser Asp
      85              90              95

Lys Cys Thr Ser Arg Trp Gly Arg Arg Arg Pro Phe Ile Leu Thr Gly
      100              105              110

Cys Ile Leu Ile Cys Ile Ala Val Val Val Val Gly Phe Ser Ala Asp
      115              120              125

Ile Gly Ala Ala Leu Gly Asp Ser Lys Glu Glu Cys Ser Leu Tyr His
      130              135              140

Gly Pro Arg Trp His Ala Ala Ile Val Tyr Val Leu Gly Phe Trp Leu
      145              150              155              160

Leu Asp Phe Ser Asn Asn Thr Val Gln Gly Pro Ala Arg Ala Leu Met
      165              170              175

Ala Asp Leu Ser Ala Gln His Gly Pro Ser Ala Ala Asn Ser Ile Phe
      180              185              190

Cys Ser Trp Met Ala Leu Gly Asn Ile Leu Gly Tyr Ser Ser Gly Ser
      195              200              205

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Thr	Asn	Asn	Trp	His	Lys	Trp	Phe	Pro	Phe	Leu	Arg	Thr	Arg	Ala	Cys
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Cys	Glu	Ala	Cys	Ala	Asn	Leu	Lys	Gly	Ala	Phe	Leu	Val	Ala	Val	Leu
225					230					235					240
Phe	Leu	Ala	Phe	Cys	Leu	Val	Ile	Thr	Val	Ile	Phe	Ala	Lys	Glu	Ile
				245					250					255	
Pro	Tyr	Lys	Ala	Ile	Ala	Pro	Leu	Pro	Thr	Lys	Ala	Asn	Gly	Gln	Val
			260					265					270		
Glu	Val	Glu	Pro	Thr	Gly	Pro	Leu	Ala	Val	Phe	Lys	Gly	Phe	Lys	Asn
		275					280					285			
Leu	Pro	Pro	Gly	Met	Pro	Ser	Val	Leu	Leu	Val	Thr	Gly	Leu	Thr	Trp
	290					295					300				
Leu	Ser	Trp	Phe	Pro	Phe	Ile	Leu	Tyr	Asp	Thr	Asp	Trp	Met	Gly	Arg
305					310					315					320
Glu	Ile	Tyr	His	Gly	Asp	Pro	Lys	Gly	Thr	Pro	Asp	Glu	Ala	Asn	Ala
				325					330					335	
Phe	Gln	Ala	Gly	Val	Arg	Ala	Gly	Ala	Phe	Gly	Leu	Leu	Leu	Asn	Ser
			340					345					350		
Val	Val	Leu	Gly	Phe	Ser	Ser	Phe	Leu	Ile	Glu	Pro	Leu	Cys	Lys	Arg
		355					360					365			
Leu	Gly	Pro	Arg	Val	Val	Trp	Val	Ser	Ser	Asn	Phe	Leu	Val	Cys	Leu
	370					375					380				
Ser	Met	Ala	Ala	Ile	Cys	Ile	Ile	Ser	Trp	Trp	Ala	Thr	Gln	Asp	Leu
385					390					395					400
His	Gly	Tyr	Ile	Gln	His	Ala	Ile	Thr	Ala	Ser	Lys	Glu	Ile	Lys	Ile
				405					410					415	
Val	Ser	Leu	Ala	Leu	Phe	Ala	Phe	Leu	Gly	Ile	Pro	Leu	Ala	Ile	Leu
			420					425					430		
Tyr	Ser	Val	Thr	Phe	Ala	Val	Thr	Ala	Gln	Leu	Ala	Ala	Asn	Arg	Cys
		435					440					445			
Gly	Gly	Gln	Trp	Leu	Cys	Thr	Gly	Val	Leu	Asn	Ile	Ala	Ile	Ala	Ile
	450					455					460				
Pro	Gln	Val	Ile	Ile	Ala	Leu	Gly	Ala	Gly	Pro	Trp	Asp	Glu	Leu	Phe
465					470					475					480
Gly	Lys	Gly	Asn	Ile	Pro	Ala	Phe	Gly	Val	Ala	Ser	Ala	Phe	Ala	Leu
				485					490					495	
Ile	Gly	Gly	Ile	Val	Gly	Ile	Phe	Leu	Leu	Pro	Lys	Ile	Ser	Arg	Leu
			500					505					510		
Gln	Phe	Arg	Ala	Val	Ser	Gly	Gly	Gly	His						
		515					520								

<210> 23
 <211> 2030
 <212> DNA
 <213> Triticum aestivum

<400> 23
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 cctgtactcg agcaagctt aacatattgt cggggcagat aaaacagtca agacctcagc 1380
 gcttattctt ttctctcttc tcggattgcc actctcgatc acttatagt ttcggttctc 1440
 cgtgactgct gagctgactg ccggaacagg aggcggacaa ggtttggcta ctggagttct 1500
 gaatcttgcc atcgctcgtc ctcagatagt agtgtcactc ggagcaggcc catgggacaa 1560
 gctcttgggg ggagggaacg tccccgctt cgccttgcc tcggtcttct cgctagcagc 1620
 cggagtgcct gcggtgatca agctgccccaa gttgtcgaac aattaccaat ccgcgcgctt 1680
 ccacatgggc tgaaccctaa agcccgaagc cagctgctgt gtgtaacatc cagatgttta 1740
 gtaccaatcc gccggtttcc atattaagat tcgtttatat ggagatgatt ctttttctcc 1800
 tcttgctaga tacacagtta ataagactac agatcagata gactaggata aagagatagt 1860
 ttttaggcct gtgtgcatac aagtgtcgat gagaagtTgt aaaacatgta cactgttttt 1920
 ttgtactgta tatgtagtga aatttcatag atggccggat gtgttctggt ccgataaaaa 1980
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2030

<210> 24
 <211> 563
 <212> PRT
 <213> Triticum aestivum

<400> 24
 Gly Ser Asp Ala Ala Arg Pro Lys Glu Glu Gln Gly Ser Gly Ala Gly
 1 5 10 15
 Ala Gly Glu Gly Gly Met Lys Gly Ala Pro Lys Trp Arg Val Val Leu
 20 25 30
 Ala Cys Met Val Ala Ala Gly Val Gln Phe Gly Trp Ala Leu Gln Leu
 35 40 45
 Ser Leu Leu Thr Pro Tyr Ile Gln Thr Leu Gly Ile Asp His Ala Met
 50 55 60
 Ala Ser Phe Ile Trp Leu Cys Gly Pro Ile Thr Gly Phe Val Val Gln
 65 70 75 80

Pro Cys Val Gly Val Trp Ser Asp Lys Cys Arg Ser Lys Tyr Gly Arg
 85 90 95
 Arg Arg Pro Phe Ile Leu Ala Gly Cys Val Leu Ile Cys Ala Ala Val
 100 105 110
 Thr Leu Val Gly Phe Ser Ala Asp Leu Gly Tyr Met Leu Gly Asp Thr
 115 120 125
 Thr Glu His Cys Ser Thr Tyr Lys Gly Leu Arg Tyr Arg Ala Ala Phe
 130 135 140
 Ile Phe Ile Phe Gly Phe Trp Met Leu Asp Leu Ala Asn Asn Thr Val
 145 150 155 160
 Gln Gly Pro Ala Arg Ala Leu Leu Ala Asp Leu Ser Gly Pro Asp Gln
 165 170 175
 Cys Asn Ser Ala Asn Ala Ile Phe Cys Ser Trp Met Ala Val Gly Asn
 180 185 190
 Val Leu Gly Phe Ser Ala Gly Ala Ser Gly Asn Trp His Lys Trp Phe
 195 200 205
 Pro Phe Leu Met Thr Arg Ala Cys Cys Glu Ala Cys Gly Asn Leu Lys
 210 215 220
 Ala Ala Phe Leu Ile Ala Val Val Phe Leu Leu Phe Cys Met Ala Val
 225 230 235 240
 Thr Leu Tyr Phe Ala Glu Glu Ile Pro Leu Glu Pro Lys Asp Ala Gln
 245 250 255
 Gln Leu Ser Asp Ser Ala Pro Leu Leu Asn Gly Ser Arg Asp Asp His
 260 265 270
 Asp Ala Ser Ser Glu Gln Thr Asn Gly Gly Leu Ser Asn Gly His Ala
 275 280 285
 Asp Ala Asn His Val Ser Ala Asn Ser Ser Ala Asp Ala Gly Ser Asn
 290 295 300
 Ser Asn Lys Asp Asp Val Glu Ala Phe Asn Asp Gly Pro Gly Ala Val
 305 310 315 320
 Leu Val Lys Ile Leu Thr Ser Met Arg His Leu Pro Pro Gly Met Tyr
 325 330 335
 Ser Val Leu Leu Val Met Ala Leu Thr Trp Leu Ser Trp Phe Pro Phe
 340 345 350
 Phe Leu Phe Asp Thr Asp Trp Met Gly Arg Glu Val Tyr His Gly Asp
 355 360 365
 Pro Lys Gly Asn Ala Ser Glu Arg Lys Ala Tyr Asp Asp Gly Val Arg
 370 375 380
 Glu Gly Ala Phe Gly Leu Leu Leu Asn Ser Val Val Leu Gly Ile Gly
 385 390 395 400

Ser Phe Leu Ile Asp Pro Leu Cys Arg Met Ile Gly Ala Arg Leu Val
 405 410 415
 Trp Ala Ile Ser Asn Phe Ile Val Phe Ala Cys Met Leu Ala Thr Thr
 420 425 430
 Ile Leu Ser Trp Ile Ser Tyr Asp Leu Tyr Ser Ser Lys Leu Gln His
 435 440 445
 Ile Val Gly Ala Asp Lys Thr Val Lys Thr Ser Ala Leu Ile Leu Phe
 450 455 460
 Ser Leu Leu Gly Leu Pro Leu Ser Ile Thr Tyr Ser Val Pro Phe Ser
 465 470 475 480
 Val Thr Ala Glu Leu Thr Ala Gly Thr Gly Gly Gly Gln Gly Leu Ala
 485 490 495
 Thr Gly Val Leu Asn Leu Ala Ile Val Ala Pro Gln Ile Val Val Ser
 500 505 510
 Leu Gly Ala Gly Pro Trp Asp Lys Leu Leu Gly Gly Gly Asn Val Pro
 515 520 525
 Ala Phe Ala Leu Ala Ser Val Phe Ser Leu Ala Ala Gly Val Leu Ala
 530 535 540
 Val Ile Lys Leu Pro Lys Leu Ser Asn Asn Tyr Gln Ser Ala Gly Phe
 545 550 555 560
 His Met Gly

<210> 25
 <211> 501
 <212> PRT
 <213> Daucus carota

<400> 25
 Met Ala Gly Pro Glu Ala Asp Arg Asn Arg His Arg Gly Gly Ala Thr
 1 5 10 15
 Ala Ala Pro Pro Pro Arg Ser Arg Val Ser Leu Arg Leu Leu Leu Arg
 20 25 30
 Val Ala Ser Val Ala Cys Gly Ile Gln Phe Gly Trp Ala Leu Gln Leu
 35 40 45
 Ser Leu Leu Thr Pro Tyr Val Gln Glu Leu Gly Ile Pro His Ala Trp
 50 55 60
 Ser Ser Ile Ile Trp Leu Cys Gly Pro Leu Ser Gly Leu Leu Val Gln
 65 70 75 80
 Pro Ile Val Gly His Met Ser Asp Gln Cys Thr Ser Lys Tyr Gly Arg
 85 90 95
 Arg Arg Pro Phe Ile Val Ala Gly Gly Thr Ala Ile Ile Leu Ala Val
 100 105 110
 Ile Ile Ile Ala His Ser Ala Asp Ile Gly Gly Leu Leu Gly Asp Thr

115					120					125					
Ala	Asp	Asn	Lys	Thr	Met	Ala	Ile	Val	Ala	Phe	Val	Ile	Gly	Phe	Trp
130						135					140				
Ile	Leu	Asp	Val	Ala	Asn	Asn	Met	Thr	Gln	Gly	Pro	Cys	Arg	Ala	Leu
145					150					155					160
Leu	Ala	Asp	Leu	Thr	Gly	Asn	Asp	Ala	Arg	Arg	Thr	Arg	Val	Ala	Asn
				165					170					175	
Ala	Tyr	Phe	Ser	Leu	Phe	Met	Ala	Ile	Gly	Asn	Val	Leu	Gly	Tyr	Ala
			180					185					190		
Thr	Gly	Ala	Tyr	Ser	Gly	Trp	Tyr	Lys	Val	Phe	Pro	Phe	Ser	Leu	Thr
		195					200					205			
Ser	Ser	Cys	Thr	Ile	Asn	Cys	Ala	Asn	Leu	Lys	Ser	Ala	Phe	Tyr	Ile
	210					215					220				
Asp	Ile	Ile	Phe	Ile	Ile	Ile	Thr	Thr	Tyr	Ile	Ser	Ile	Ser	Ala	Ala
225					230					235					240
Lys	Glu	Arg	Pro	Arg	Ile	Ser	Ser	Gln	Asp	Gly	Pro	Gln	Phe	Ser	Glu
				245					250					255	
Asp	Gly	Thr	Ala	Gln	Ser	Gly	His	Ile	Glu	Glu	Ala	Phe	Leu	Trp	Glu
			260					265					270		
Leu	Phe	Gly	Thr	Phe	Arg	Leu	Leu	Pro	Gly	Ser	Val	Trp	Val	Ile	Leu
		275					280					285			
Leu	Val	Thr	Cys	Leu	Asn	Trp	Ile	Gly	Trp	Phe	Pro	Phe	Ile	Leu	Phe
	290					295					300				
Asp	Thr	Asp	Trp	Met	Gly	Arg	Glu	Ile	Tyr	Gly	Gly	Glu	Pro	Asn	Gln
305					310					315					320
Gly	Gln	Ser	Tyr	Ser	Asp	Gly	Val	Arg	Met	Gly	Ala	Phe	Gly	Leu	Met
				325					330					335	
Met	Asn	Ser	Val	Val	Leu	Gly	Ile	Thr	Ser	Val	Leu	Met	Glu	Lys	Leu
			340					345					350		
Cys	Arg	Ile	Trp	Gly	Ser	Gly	Phe	Met	Trp	Gly	Leu	Ser	Asn	Ile	Leu
		355					360					365			
Met	Thr	Ile	Cys	Phe	Phe	Ala	Met	Leu	Leu	Ile	Thr	Phe	Ile	Ala	Lys
	370					375					380				
Asn	Met	Asp	Tyr	Gly	Thr	Asn	Pro	Pro	Pro	Asn	Gly	Ile	Val	Ile	Ser
385					390					395					400
Ala	Leu	Ile	Val	Phe	Ala	Ile	Leu	Gly	Ile	Pro	Leu	Ala	Ile	Thr	Tyr
				405					410					415	
Ser	Val	Pro	Tyr	Ala	Leu	Val	Ser	Thr	Arg	Ile	Glu	Ser	Leu	Gly	Leu
			420					425					430		
Gly	Gln	Gly	Leu	Ser	Met	Gly	Val	Leu	Asn	Leu	Ala	Ile	Val	Val	Pro
		435					440					445			

Gln Val Ile Val Ser Leu Gly Ser Gly Pro Trp Asp Gln Leu Phe Gly
450 455 460

Gly Gly Asn Ser Pro Ala Phe Val Val Ala Ala Leu Ser Ala Phe Ala
465 470 475 480

Ala Gly Leu Ile Ala Leu Ile Ala Ile Arg Arg Pro Arg Val Asp Lys
485 490 495

Ser Arg Leu His His
500

<210> 26
<211> 537
<212> PRT
<213> *Oryza sativa*

<400> 26
Met Ala Arg Gly Ser Gly Ala Gly Gly Gly Gly Gly Gly Gly Gly Gly
1 5 10 15

Gly Leu Glu Leu Ser Val Gly Val Gly Gly Gly Gly Ala Arg Gly Gly
20 25 30

Gly Gly Gly Glu Ala Ala Ala Ala Val Glu Thr Ala Ala Pro Ile Ser
35 40 45

Leu Gly Arg Leu Ile Leu Ser Gly Met Val Ala Gly Gly Val Gln Tyr
50 55 60

Gly Trp Ala Leu Gln Leu Ser Leu Leu Thr Pro Tyr Val Gln Thr Leu
65 70 75 80

Gly Leu Ser His Ala Leu Thr Ser Phe Met Trp Leu Cys Gly Pro Ile
85 90 95

Ala Gly Met Val Val Gln Pro Cys Val Gly Leu Tyr Ser Asp Arg Cys
100 105 110

Thr Ser Lys Trp Gly Arg Arg Arg Pro Tyr Ile Leu Thr Gly Cys Val
115 120 125

Leu Ile Cys Leu Ala Val Val Val Ile Gly Phe Ser Ala Asp Ile Gly
130 135 140

Tyr Ala Met Gly Asp Thr Lys Glu Asp Cys Ser Val Tyr His Gly Ser
145 150 155 160

Arg Trp His Ala Ala Ile Val Tyr Val Leu Gly Phe Trp Leu Leu Asp
165 170 175

Phe Ser Asn Asn Thr Val Gln Gly Pro Ala Arg Ala Leu Met Ala Asp
180 185 190

Leu Ser Gly Arg His Gly Pro Gly Thr Ala Asn Ser Ile Phe Cys Ser
195 200 205

Trp Met Ala Met Gly Asn Ile Leu Gly Tyr Ser Ser Gly Ser Thr Asn
210 215 220

Asn	Trp	His	Lys	Trp	Phe	Pro	Phe	Leu	Lys	Thr	Arg	Ala	Cys	Cys	Glu	225	230	235	240
Ala	Cys	Ala	Asn	Leu	Lys	Gly	Ala	Phe	Leu	Val	Ala	Val	Ile	Phe	Leu	245	250	255	
Ser	Leu	Cys	Leu	Val	Ile	Thr	Leu	Ile	Phe	Ala	Lys	Glu	Val	Pro	Phe	260	265	270	
Lys	Gly	Asn	Ala	Ala	Leu	Pro	Thr	Lys	Ser	Asn	Glu	Pro	Ala	Glu	Pro	275	280	285	
Glu	Gly	Thr	Gly	Pro	Leu	Ala	Val	Leu	Lys	Gly	Phe	Arg	Asn	Leu	Pro	290	295	300	
Thr	Gly	Met	Pro	Ser	Val	Leu	Ile	Val	Thr	Gly	Leu	Thr	Trp	Leu	Ser	305	310	315	320
Trp	Phe	Pro	Phe	Ile	Leu	Tyr	Asp	Thr	Asp	Trp	Met	Gly	Arg	Glu	Ile	325	330	335	
Tyr	His	Gly	Asp	Pro	Lys	Gly	Thr	Asp	Pro	Gln	Ile	Glu	Ala	Phe	Asn	340	345	350	
Gln	Gly	Val	Arg	Ala	Gly	Ala	Phe	Gly	Leu	Leu	Leu	Asn	Ser	Ile	Val	355	360	365	
Leu	Gly	Phe	Ser	Ser	Phe	Leu	Ile	Glu	Pro	Met	Cys	Arg	Lys	Val	Gly	370	375	380	
Pro	Arg	Val	Val	Trp	Val	Thr	Ser	Asn	Phe	Leu	Val	Cys	Ile	Ala	Met	385	390	395	400
Ala	Ala	Thr	Ala	Leu	Ile	Ser	Phe	Trp	Ser	Leu	Lys	Asp	Phe	His	Gly	405	410	415	
Thr	Val	Gln	Lys	Ala	Ile	Thr	Ala	Asp	Lys	Ser	Ile	Lys	Ala	Val	Cys	420	425	430	
Leu	Val	Leu	Phe	Ala	Phe	Leu	Gly	Val	Pro	Leu	Ala	Val	Leu	Tyr	Ser	435	440	445	
Val	Pro	Phe	Ala	Val	Thr	Ala	Gln	Leu	Ala	Ala	Thr	Arg	Gly	Gly	Gly	450	455	460	
Gln	Gly	Leu	Cys	Thr	Gly	Val	Leu	Asn	Ile	Ser	Ile	Val	Ile	Pro	Gln	465	470	475	480
Val	Val	Ile	Ala	Leu	Gly	Ala	Gly	Pro	Trp	Asp	Glu	Leu	Phe	Gly	Lys	485	490	495	
Gly	Asn	Ile	Pro	Ala	Phe	Gly	Leu	Ala	Ser	Gly	Phe	Ala	Leu	Ile	Gly	500	505	510	
Gly	Val	Ala	Gly	Ile	Phe	Leu	Leu	Pro	Lys	Ile	Ser	Lys	Arg	Gln	Phe	515	520	525	
Trp	Ser	Val	Ser	Met	Gly	Gly	Gly	His								530	535		

<210> 27

<211> 533
<212> PRT
<213> Ricinus communis

<400> 27

Met	Gln	Ser	Ser	Thr	Ser	Lys	Glu	Asn	Lys	Gln	Pro	Pro	Ser	Ser	Gln	
1				5					10					15		
Pro	His	Pro	Pro	Pro	Leu	Met	Val	Ala	Gly	Ala	Ala	Glu	Pro	Asn	Ser	
			20					25					30			
Ser	Pro	Leu	Arg	Lys	Val	Val	Met	Val	Ala	Ser	Ile	Ala	Ala	Gly	Ile	
		35					40					45				
Gln	Phe	Gly	Trp	Ala	Leu	Gln	Leu	Ser	Leu	Leu	Thr	Pro	Tyr	Val	Gln	
	50					55					60					
Leu	Leu	Gly	Ile	Pro	His	Thr	Trp	Ala	Ala	Phe	Ile	Trp	Leu	Cys	Gly	
65					70					75					80	
Pro	Ile	Ser	Gly	Met	Leu	Val	Gln	Pro	Ile	Val	Gly	Tyr	His	Ser	Asp	
				85					90					95		
Arg	Cys	Thr	Ser	Arg	Phe	Gly	Arg	Arg	Arg	Pro	Phe	Ile	Ala	Ser	Gly	
			100					105					110			
Ala	Ala	Phe	Val	Ala	Ile	Ala	Val	Phe	Leu	Ile	Gly	Tyr	Ala	Ala	Asp	
		115					120					125				
Leu	Gly	His	Leu	Ser	Gly	Asp	Ser	Leu	Asp	Lys	Ser	Pro	Lys	Thr	Arg	
	130					135					140					
Ala	Ile	Ala	Ile	Phe	Val	Val	Gly	Phe	Trp	Ile	Leu	Asp	Val	Ala	Asn	
145					150					155					160	
Asn	Met	Leu	Gln	Gly	Pro	Cys	Arg	Ala	Leu	Leu	Ala	Asp	Leu	Ser	Gly	
			165						170					175		
Thr	Ser	Gln	Lys	Lys	Thr	Arg	Thr	Ala	Asn	Ala	Leu	Phe	Ser	Phe	Phe	
			180					185					190			
Met	Ala	Val	Gly	Asn	Val	Leu	Gly	Tyr	Ala	Ala	Gly	Ala	Tyr	Thr	His	
		195					200					205				
Leu	Tyr	Lys	Leu	Phe	Pro	Phe	Thr	Lys	Thr	Thr	Ala	Cys	Asp	Val	Tyr	
	210					215					220					
Cys	Ala	Asn	Leu	Lys	Ser	Cys	Phe	Phe	Ile	Ser	Ile	Val	Leu	Leu	Leu	
225					230					235					240	
Ser	Leu	Thr	Val	Leu	Ala	Leu	Ser	Tyr	Val	Lys	Glu	Lys	Pro	Trp	Ser	
				245					250					255		
Pro	Asp	Gln	Ala	Val	Asp	Asn	Ala	Glu	Asp	Asp	Thr	Ala	Ser	Gln	Ala	
			260					265					270			
Ser	Ser	Ser	Ala	Gln	Pro	Met	Pro	Phe	Phe	Gly	Glu	Ile	Leu	Gly	Ala	
		275					280					285				
Phe	Lys	Asn	Leu	Lys	Arg	Pro	Met	Trp	Ile	Leu	Leu	Leu	Val	Thr	Cys	
	290					295					300					

Leu Asn Trp Ile Ala Trp Phe Pro Phe Leu Leu Phe Asp Thr Asp Trp
 305 310 315 320
 Met Gly Arg Glu Val Tyr Gly Gly Asp Ser Ser Gly Ser Ala Glu Gln
 325 330 335
 Leu Lys Leu Tyr Asp Arg Gly Val Arg Ala Gly Ala Leu Gly Leu Met
 340 345 350
 Leu Asn Ser Val Val Leu Gly Phe Thr Ser Leu Gly Val Glu Val Leu
 355 360 365
 Ala Arg Gly Val Gly Gly Val Lys Arg Leu Trp Gly Ile Val Asn Phe
 370 375 380
 Val Leu Ala Val Cys Leu Ala Met Thr Val Leu Val Thr Lys Gln Ala
 385 390 395 400
 Glu Ser Thr Arg Arg Phe Ala Thr Val Ser Gly Gly Ala Lys Val Pro
 405 410 415
 Leu Pro Pro Pro Ser Gly Val Lys Ala Gly Ala Leu Ala Leu Phe Ala
 420 425 430
 Val Met Gly Val Pro Gln Ala Ile Thr Tyr Ser Ile Pro Phe Ala Leu
 435 440 445
 Ala Ser Ile Phe Ser Asn Thr Ser Gly Ala Gly Gln Gly Leu Ser Leu
 450 455 460
 Gly Val Leu Asn Leu Ser Ile Val Ile Pro Gln Met Ile Val Ser Val
 465 470 475 480
 Ala Ala Gly Pro Trp Asp Ala Leu Phe Gly Gly Gly Asn Leu Pro Ala
 485 490 495
 Phe Val Val Gly Ala Val Ala Ala Leu Ala Ser Gly Ile Phe Ala Leu
 500 505 510
 Thr Met Leu Pro Ser Pro Gln Pro Asp Met Pro Ser Ala Lys Ala Leu
 515 520 525
 Thr Ala Ala Phe His
 530

<210> 28
 <211> 523
 <212> PRT
 <213> Vicia faba

<400> 28
 Met Glu Pro Leu Ser Ser Thr Lys Gln Ile Asn Asn Asn Asn Asn Leu
 1 5 10 15
 Ala Lys Pro Ser Ser Leu His Val Glu Thr Gln Pro Leu Glu Pro Ser
 20 25 30
 Pro Leu Arg Lys Ile Met Val Val Ala Ser Ile Ala Ala Gly Val Gln
 35 40 45

Phe	Gly	Trp	Ala	Leu	Gln	Leu	Ser	Leu	Leu	Thr	Pro	Tyr	Val	Gln	Leu	50	55	60
Leu	Gly	Ile	His	His	Thr	Trp	Ala	Ala	Tyr	Ile	Trp	Leu	Cys	Gly	Pro	65	70	75
Ile	Ser	Gly	Met	Leu	Val	Gln	Pro	Ile	Val	Gly	Tyr	His	Ser	Asp	Arg	85	90	95
Cys	Thr	Ser	Arg	Phe	Gly	Arg	Arg	Arg	Pro	Phe	Ile	Ala	Ala	Gly	Ser	100	105	110
Ile	Ala	Val	Ala	Ile	Ala	Val	Phe	Leu	Ile	Gly	Tyr	Ala	Ala	Asp	Leu	115	120	125
Gly	His	Ser	Phe	Gly	Asp	Ser	Leu	Asp	Gln	Lys	Val	Arg	Pro	Arg	Ala	130	135	140
Ile	Gly	Ile	Phe	Val	Val	Gly	Phe	Trp	Ile	Leu	Asp	Val	Ala	Asn	Asn	145	150	155
Met	Leu	Gln	Gly	Pro	Cys	Arg	Ala	Leu	Leu	Gly	Asp	Leu	Cys	Ala	Gly	165	170	175
Asn	Gln	Arg	Lys	Thr	Arg	Asn	Ala	Asn	Ala	Phe	Phe	Ser	Phe	Phe	Met	180	185	190
Ala	Val	Gly	Asn	Val	Leu	Gly	Tyr	Ala	Ala	Gly	Ala	Tyr	Ser	Lys	Leu	195	200	205
Tyr	His	Val	Phe	Pro	Phe	Thr	Lys	Thr	Lys	Ala	Cys	Asn	Val	Tyr	Cys	210	215	220
Ala	Asn	Leu	Lys	Ser	Cys	Phe	Phe	Leu	Ser	Ile	Ala	Leu	Leu	Thr	Val	225	230	235
Leu	Ala	Thr	Ser	Ala	Leu	Ile	Tyr	Val	Lys	Glu	Thr	Ala	Leu	Thr	Pro	245	250	255
Glu	Lys	Thr	Val	Val	Thr	Thr	Glu	Asp	Gly	Gly	Ser	Ser	Gly	Gly	Met	260	265	270
Pro	Cys	Phe	Gly	Gln	Leu	Ser	Gly	Ala	Phe	Lys	Glu	Leu	Lys	Arg	Pro	275	280	285
Met	Trp	Ile	Leu	Leu	Leu	Val	Thr	Cys	Leu	Asn	Trp	Ile	Ala	Trp	Phe	290	295	300
Pro	Phe	Leu	Leu	Phe	Asp	Thr	Asp	Trp	Met	Gly	Lys	Glu	Val	Tyr	Gly	305	310	315
Gly	Thr	Val	Gly	Glu	Gly	His	Ala	Tyr	Asp	Met	Gly	Val	Arg	Glu	Gly	325	330	335
Ala	Leu	Gly	Leu	Met	Leu	Asn	Ser	Val	Val	Leu	Gly	Ala	Thr	Ser	Leu	340	345	350
Gly	Val	Asp	Ile	Leu	Ala	Arg	Gly	Val	Gly	Gly	Val	Lys	Arg	Leu	Trp	355	360	365
Gly	Ile	Val	Asn	Phe	Leu	Leu	Ala	Ile	Cys	Leu	Gly	Leu	Thr	Val	Leu			

370

375

380

Val Thr Lys Leu Ala Gln His Ser Arg Gln Tyr Ala Pro Gly Thr Gly
385 390 395 400

Ala Leu Gly Asp Pro Leu Pro Pro Ser Glu Gly Ile Lys Ala Gly Ala
405 410 415

Leu Thr Leu Phe Ser Val Leu Gly Val Pro Leu Ala Ile Thr Tyr Ser
420 425 430

Ile Pro Phe Ala Leu Ala Ser Ile Phe Ser Ser Thr Ser Gly Ala Gly
435 440 445

Gln Gly Leu Ser Leu Gly Val Leu Asn Leu Ala Ile Val Ile Pro Gln
450 455 460

Met Phe Val Ser Val Leu Ser Gly Pro Trp Asp Ala Leu Phe Gly Gly
465 470 475 480

Gly Asn Leu Pro Ala Phe Val Val Gly Ala Val Ala Ala Leu Ala Ser
485 490 495

Gly Ile Leu Ser Ile Ile Leu Leu Pro Ser Pro Pro Pro Asp Met Ala
500 505 510

Lys Ser Val Ser Ala Thr Gly Gly Gly Phe His
515 520

C/
cont.